

Uroskop ACCESS

SP

Quality Assurance

System

Image Quality Quick Test

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1 Introduction

1.1 System identification

Part no.:	_____	Serial no.:	_____
Customer/clinic:	_____		
Address:	_____	City:	_____
State/province:	_____	Country:	_____
Phone no.:	_____	Contact person:	_____
System no.:	_____	Office:	_____
Responsible system engineer:		_____	

System configuration:I.I. 40 cm ☐I.I. 33 cm ☐With cassette ☐**Image quality acceptance in the factory performed completely and documented by:**

Name (block letters): _____ Signed: _____

Signed: _____ Date: _____

Customer installation date: _____

IQ quick test performed at:

Handover to customer ☐During maintenance ☐**Settings deviating from the standard due to:**Country-specific regulations ☐ Spec. customer wishes ☐Reasons: _____

Name (block letters): _____ Office: _____

Signed: _____

1.2 Required measuring and auxiliary equipment

- Set of X-ray filters, 10 x 0.3 mm Cu 44 06 120 RV090
- Precision X-ray filter, 2.1 mm Cu 99 00 598 XE999
- Measuring stand, 25 mm Al, type 26765 acc. to DIN 6868 part 50
or
1.2 mm Cu from the X-ray filter set 97 98 596 G5321 and
17 µm Cu strips 11 67 662 G5247
- Resolution test set type 41 28 71 820 RE999
Factory: Resolution test type 41a
- Densitometer e.g. X-Rite 331 97 02 416 Y1996
or PTW-BC21 including black check
Type 5321 and light box type 53213
- Dynamic test case 37 90 156 X1963
or 97 50 001 X1963
- containing: TV dynamic test 37 90 164 X1963
Heart contour diaphragm 37 90 172 X1963
Capillary test 37 90 180 X1963
Bracket 87 13 901 X1963
Veiling glare test 87 09 743 X1963
- Mavo monitor (cancelled) 97 02 432 Y0526
- SMFit Spotmeter 77 52 848

1.3 Abbreviations

ADR	Automatic dose regulation
IQ	Image quality
I.I.	X-ray image intensifier
CRT	Kathodenstrahlröhre
DR	Exposure
FL	Fluoroscopy
TV	Television
HC	High contrast
LIH	Last image hold
Lp	Line pairs
LUT	Look-up Table
PDA	Photo Diode Array
PFL	Pulsed fluoroscopy

1.4 Documents required

Replacement of Parts; System; Basic Unit and Imaging System	SPL5-330.841.01
General Hardcopy Camera Information	SPL5-330.814.10
Specific Hardcopy Camera Information	SPL5-330.814

1.5 Requirements

1.5.1 Basic measuring conditions

- Completely functioning system; ensure that
 - Grid,
 - Tube assembly with collimator and 2.1 mm Cu
 - Patient table without mattress

are installed.

- A medium-level dose rate (I.I. input) in FL means:
(full format; setting tolerance 15%).
A medium-level dose rate (I.I. input) in DR means:
(full format; setting tolerance 20%).

33-cm I.I.:	0.12 $\mu\text{Gy/s}$ - FL	0.676 $\mu\text{Gy/p}$ - DR (at I.I. input)
40-cm I.I.:	0.087 $\mu\text{Gy/s}$ - FL	0.464 $\mu\text{Gy/p}$ - DR(at I.I. input)

- Dose rate on table without cassette:

33-cm RBV:	0.243 $\mu\text{Gy/s}$ - FL	1.28 $\mu\text{Gy/p}$ - DR
40-cm I.I.:	0.173 $\mu\text{Gy/s}$ - FL	0.91 $\mu\text{Gy/p}$ - DR

- Dose rate on table with cassette:

33-cm I.I.:	0.267 $\mu\text{Gy/s}$ - FL	1.4 $\mu\text{Gy/p}$ - DR
40-cm I.I.:	0.190 $\mu\text{Gy/s}$ - FL	1.0 $\mu\text{Gy/p}$ - DR

- The setpoints listed in the following chapters apply for a "medium" dose level; in the case of deviating settings, setpoints may have to be adapted.
- When requested to switch
 - Noise Reduction k-Factor,
 - Edge,
 - Motion Detection,
 - Fluoroscopic characteristic
 - Or other parameters in the organ programs, select or change a correspondingly pre-defined organ program or, if possible, change the parameter directly in the examination task card.

NOTE

Use only the organ program stated in the IQ test. Deviations are pointed out explicitly.

1.6 Checking the monitors

- To load the test image on the ASPIA live monitor, consecutively call up the following items in the patient browser:
Load **Local Database/IQ Testimages** and SMPTE test image ([Fig. 1 / p. 11](#)).
- The SMPTE test image is used for setting the monitor sizes, for example.
- All gray scale values must be clearly visible on the monitor, especially the 5% and 95% fields.
- Then measure the 100% (white) and 0% (black) fields with the Mavo monitor.

NOTE

Use the SMFit Spotmeter measuring device to check TFT monitors. This measuring device will replace the Mavo monitor and is also used for checking CRT monitors.

- Check the brightness of the monitors and adjust it if necessary.

Monitor type	Luminance [cd/m ²]		Ambient light sensor activated	Comments
	0% field	100% field		
DSC 1703-DC-V	0,5 ±0,2	137 +20/-10	n. a.	*1, *2
Eizo R11	0.5 ±0.1	140 +10/-30	n.a.	*1, *2
SCD 1897-M	0.5 ±0.1	140 +10/-30	n.a.	*1, *2
DSB 1803-DC	0.8 ±0.1	400 +10/-30	no	*1, *2
DSB 1803-DC	0,5 ±0,15	260 ±30	yes	*1, *2, *3
SMD 1897-M	0,8 ±0,1	400 +10/-30	no	*1, *2
SMD 1897-M	0,5 ±0,15	260 ±30	yes	*1, *2, *3
FSC 4312	0,5 ±0,1	120 ±10	n.a.	*1, *2
Simomed HC 17"	0,5 +0,4/-0,1	210 ±10	n.a.	*2
Simomed HM 17"	0.5 ±0.1	400 +10/-30	No	*2
Simomed HM 17"	0.5 ±0.1	260 ±10	Yes	*2, *3

Notes

Setting with Mavo monitor/SMFit spotmeter in darkened environment

- *1 Setting for 100% field with backlight control; fine adjustment with contrast control if necessary.

- *2 The 5% and 95% fields must be visible.
Setting: 5% with brightness control on the monitor
Setting: 95% with contrast control on the monitor
- *3 The sensor must be completely covered for the setting.
If the sensor detects light, the image on the adjusted monitor must become noticeably brighter than in the case of the covered sensor.

SMPTE test image (positive; bones black display)

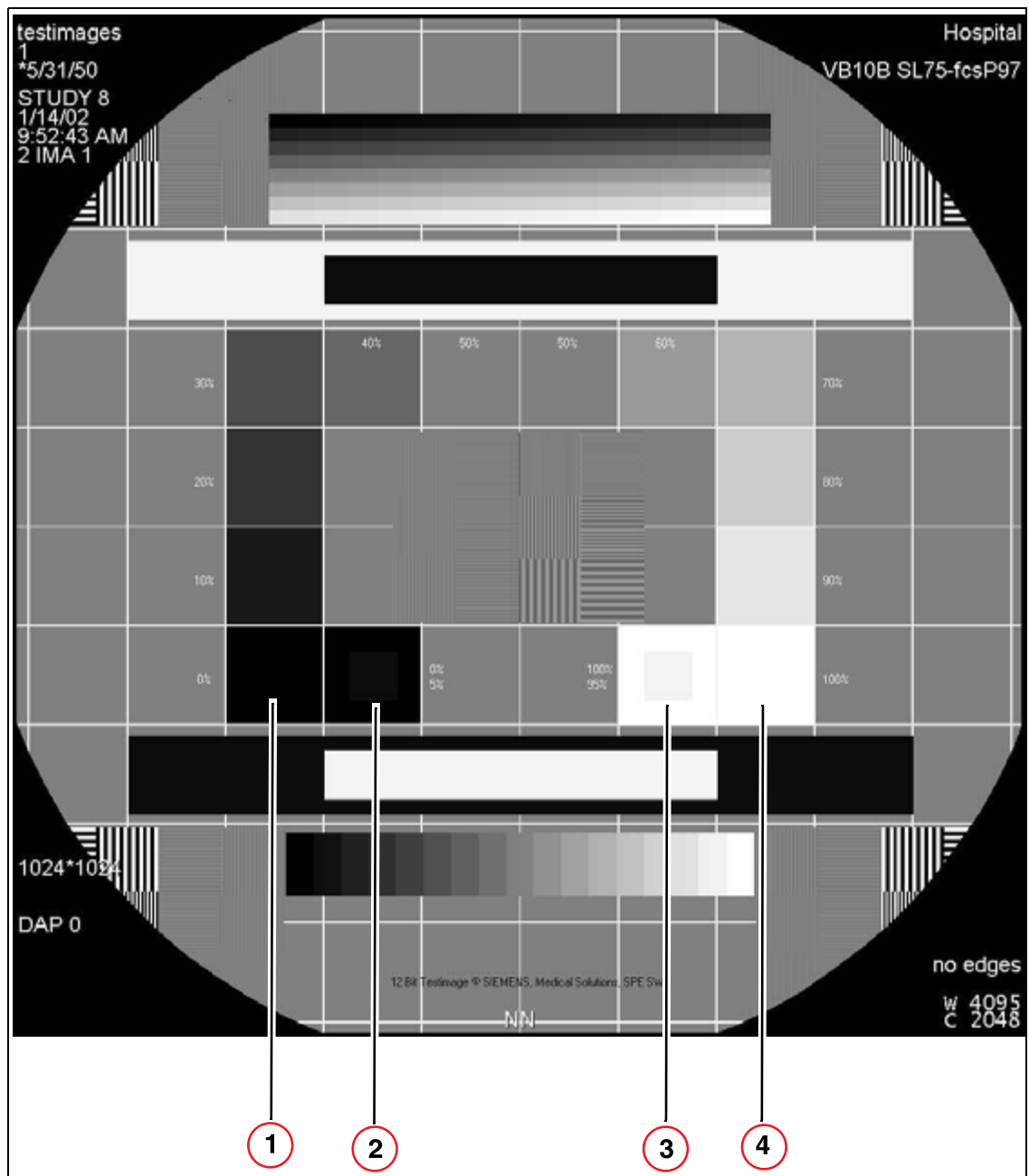


Fig. 1: SMPTE test image

Pos. 1	0% field
Pos. 2	5% field
Pos. 3	95% field
Pos. 4	100% field

NOTE

In (Fig. 1 / p. 11) the groups of lines in the center of the image are not shown in compliance with the specification since all groups of lines have to be visible (Fig. 2 / p. 12).

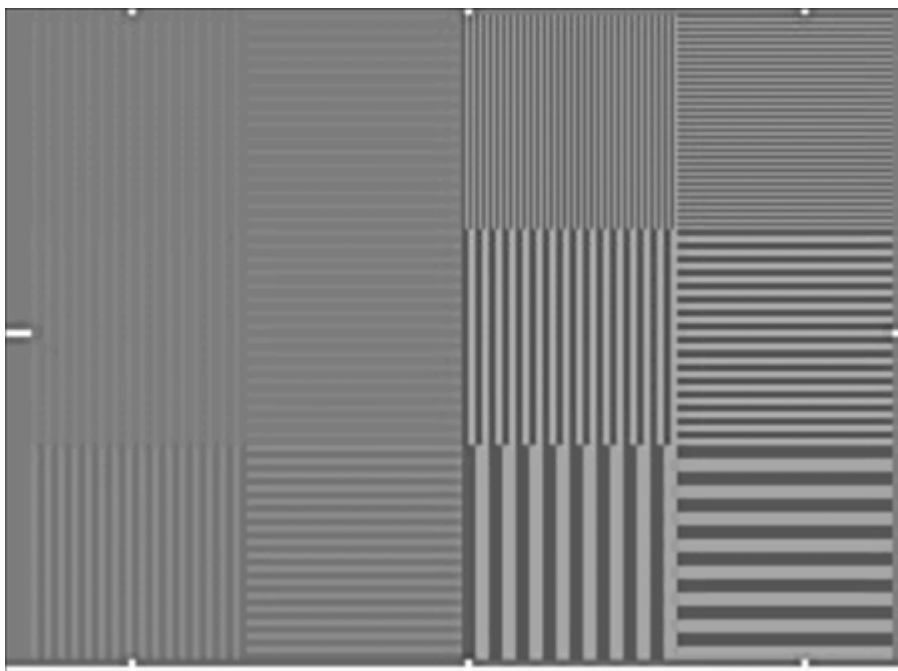


Fig. 2: Groups of lines

1.7 Tableside control (overview)

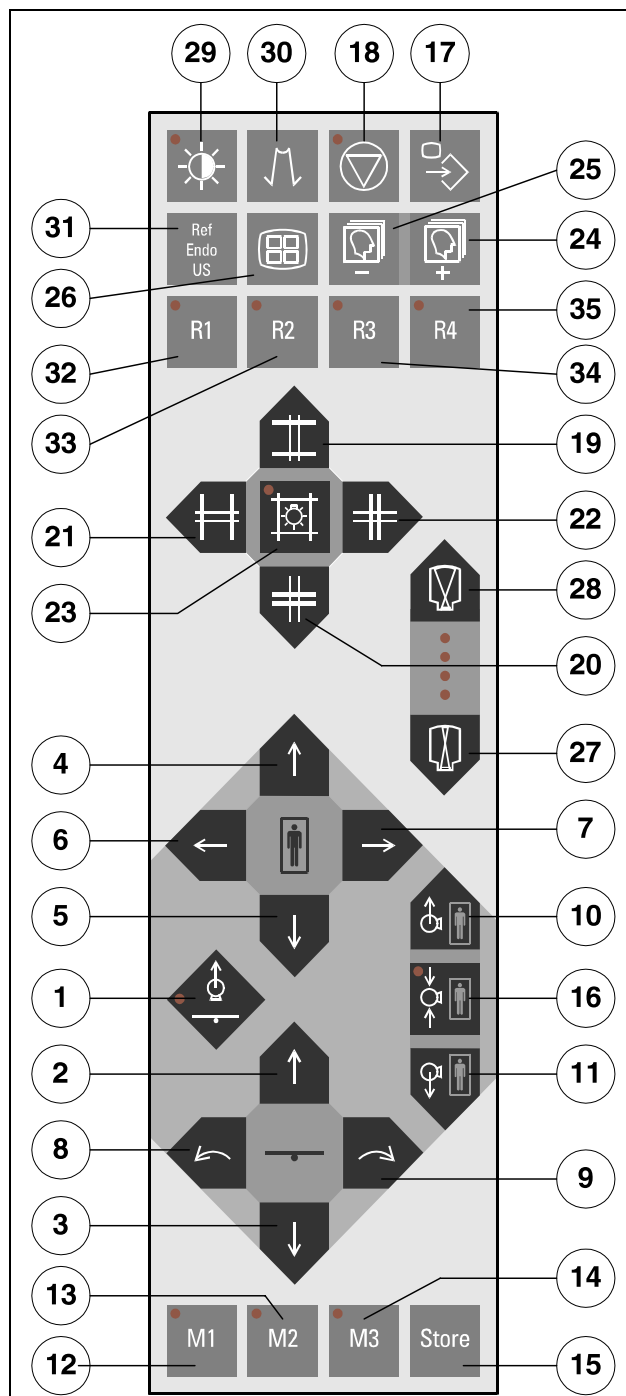


Fig. 3: Tableside control (overview)

Key functions

- | | | | |
|---|--------------------|----|-------------------------|
| 1 | Park position tube | 19 | Height diaphragm opens |
| 2 | Lift table | 20 | Height diaphragm closes |
| 3 | Lower table | 21 | Width diaphragm opens |

4	Tabletop longitudinal/headwards	22	Width diaphragm closes
5	Tabletop longitudinal/footwards	23	Switch light localizer on/off
6	Tabletop transversely/left	24	Image forward - reference monitor
7	Tabletop transversely/right	25	Image back - reference monitor
8	Table tilt left	26	Split screen
9	Table tilt right	27	Zoom -
10	X-ray system longitudinal/headwards	28	Zoom +
11	X-ray system longitudinal/footwards	29	Windowing (brightness/contrast in 2 steps)
12	Memory 1	30	Edge enhancement (2 steps)
13	Memory 2	31	Switch over monitor image Ref/Endo/US
14	Memory 3	32	Reserve 1
15	Storing	33	Reserve 2
16	Centered exposure position	34	Reserve 3
17	Store live monitor image (LIH)	35	Reserve 4
18	FL automatic Stopp		

2 Checking the ADR control characteristics

2.1 Requirements

- The standard settings are programmed for fluoroscopy, pulsed fluoroscopy and DR.
- Attach a 2.1-mm Cu precision X-ray filter for prefiltration in the area of the radiation outlet (collimator).
- Select the medium level as the dose rate.

2.2 Evaluation

NOTE

Check the programmed default organ programs. If other ADR control characteristics are to be programmed at the customer's request, first check the programmed default characteristics.

2.3 ADR control characteristics for the fluoroscopic mode



- Register a patient.
- Select the ADR control characteristic by selecting the suitable organ program ([Tab. 1 / p. 17](#)).
- Select the I.I. full format.
- Release radiation (FL).
- Read the kV and mA values on the monitor.
- End the radiation release.
- Enter the read values in ([Tab. 1 / p. 17](#)).
- The actual values documented in the factory must also be detected at the place of use.
Admissible deviations: Tube voltage (kV) ± 1 kV, tube current (mA) $\pm 10\%$.

Tab. 1 Table 1

Program name	ADR control characteristics (continuous fluoroscopy)	Setpoints		Actual values			
				Factory		Place of use	
		kV	mA	kV	mA	kV	mA
S2	C03 Iodine	69-71	0.5-1.5				
Retro. 2	Litho 63 kV HC	62-64	2.0-4.8				

2.4 ADR control characteristics for the pulsed fluoroscopy mode



- Select the ADR control characteristic by selecting the suitable organ program ([Tab. 2 / p. 18](#)).
- Select the I.I. full format.
- Release radiation (PFL).
- Read the kV and mA values on the monitor.
- End the radiation release.
- Enter the read values in ([Tab. 2 / p. 18](#)).
- The actual values documented in the factory must also be detected at the place of use.
Admissible deviations: Tube voltage (kV) ± 1 kV, tube current (mA) $\pm 10\%$.

Tab. 2 Table 2

Program name	ADR control characteristics (pulsed fluoroscopy)	Setpoints		Actual values			
				Factory		Place of use	
		kV	mA	kV	mA	kV	mA
IVP (12.5 P/s)	Anti-isowatt	60-66	0.8-2.2				
S1 (12.5 P/s)	Pediatrics	67-72	0.15-0.5				
IVP (3 P/s)	Anti-isowatt	60-66	0.15-0.5				
S1 (3 P/s)	Pediatrics	67-72	0.05-0.2				

2.5 ADR control characteristics for the DR mode



- Select the ADR control characteristic by selecting the suitable organ program ([Tab. 3 / p. 19](#)).
- Select the I.I. full format.
- Release fluoroscopy to adopt the kV.
- Release radiation (DR).
- Read the kV and mAs values displayed on the monitor.
- End the radiation release.
- Enter the read values in ([Tab. 3 / p. 19](#)).
- The actual values documented in the factory must also be detected at the place of use.
Admissible deviations: Tube voltage (kV) ± 1 kV, tube current (mA) $\pm 10\%$.

Tab. 3 Table 3

Program name	ADR control characteristics (DR)	Setpoints		Actual values			
				Factory		Place of use	
		kV	mAs	kV	mAs	kV	mAs
IVP	Auto	67-82	1.5-3				
IVP	Set 70 kV manually	70	3.6-8	70			

2.6 Checking the brightness with FL/PFL and DR

- Insert 2.1 mm Cu into the collimator.
- Select program S1 or S2 (see (Tab. 4 / p. 21) on the next page).
- Select the medium level as the dose rate.

NOTE

There should be no significant differences in brightness between the different operating modes.

- Proceed as follows for the check:
 - Save the FL image (ATB key or automatic LIH transfer).
- Evaluate the FL image in the viewer as follows:
 - Select **Options/Local Service** in the imaging system menu bar.
 - Enter the password, confirm with **OK**, and minimize the service software window.
 - Select the last image on the viewer task card.
 - Select **Tools/Rectangle** in the imaging system menu bar.

NOTE

The mouse pointer is visible with the position pointer.

- Proceed as described below:
 - Press the left mouse button and draw a square measuring field of up to 10 cm.
 - Position the mouse pointer on the edge of the square (shift symbol appears), press the left mouse button, and position the square in the center of the image.
 - Read the indication of the mean value, e.g. "**Mean/SD: 1345.3/66.1**".

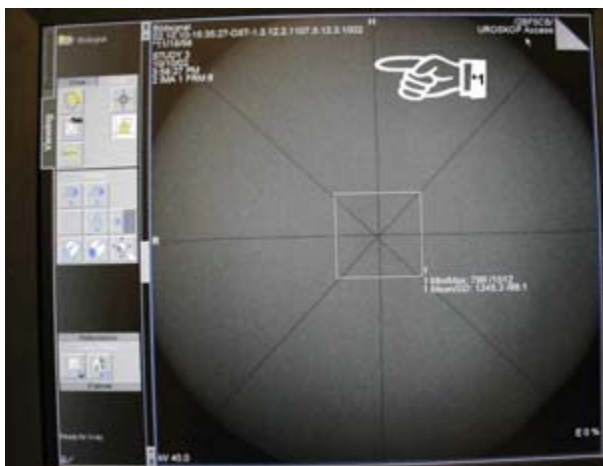


Fig. 1: *1 cross not visible, only for test in the factory

- If the TV iris is set correctly, the mean value must be $C=1350 \pm 10\%$ (range of 1215 to 1485) (Tab. 4 / p. 21).

Tab. 4 Table 4

Factory

Brightness setting ($C=1350 \pm 10\%$)

Place of use

Brightness setting ($C=1350 \pm 10\%$)

Mode (program)	Mean/SD		Mode (program)	Mean/SD
FL (S2)	/.....		FL (S2)	/.....
PFL (S1)	/.....		PFL (S1)	/.....
DR (S1)	/.....		DR (S1)	/.....

- If the brightness varies between the operating modes, perform the PDA basic adjustment and image brightness setting.

See the documents "Replacement of Parts; System; Basic Unit and Imaging System" (SPL5-330.841.01) and "Online Help".

3 Resolution

3.1 Checking the resolution and minimum contrast

3.1.1 Requirements

- Do not insert an additional Cu filter into the collimator.

NOTE

Use resolution test type 41a or type 41.

- Place the resolution test directly on the tabletop in the I.I. center so that it is at an approx. 45-degree angle to the grid lines.
- Place the 17 µm Cu strip directly on the tabletop next to the resolution test.

NOTE

In the factory: Place the 25-mm Al measuring stand on the tabletop.

Place of use: Insert 1.2-mm Cu into the collimator.



- Select the organ program (Tab. 1 / p. 22).
- Select the medium-level dose rate.
- Release radiation (FL).
- Collimate to the resolution test.
- Set the contrast to optimum resolution using button no. 29 (see the overview of table-side control, (29/Fig. 3 / p. 13)).
- Set the edge enhancement to optimum resolution using button no. 30 (e.g., 0% or 40%; see the overview of table-side control, (30/Fig. 3 / p. 13)).
- End the radiation release, determine the resolution of the LIH image, and enter the results in (Tab. 1 / p. 22).

Evaluation:

Tab. 1 Table 5

Operating mode	I.I. format	Resolution set-points [lp/mm]		Actual resolution values [lp/mm]			
				Factory		Place of use	
		40-cm I.I.	33-cm I.I.	Monitor 1	Monitor 2	Monitor 1	Monitor 2
FL (S2)	Full format	≥1.0	≥1.2				
FL (S2)	Zoom 2	≥1.6	≥2.0				

PFL (S1)	Full format	≥ 1.0	≥ 1.2				
PFL (S1)	Zoom 3	≥ 2.2	≥ 2.5				
DR (S1)	Full format	≥ 1.2	≥ 1.4				
DR (S1)	Zoom 1	≥ 1.6	≥ 1.8				

Minimum contrast perceptible?

Factory

Place of use

Full format	☐ Yes	☐ No		Full format	☐ Yes	☐ No
Zoom	☐ Yes	☐ No		Zoom	☐ Yes	☐ No

4 Capillary test

4.1 Dynamic test

NOTE

Perform this test only in the factory or, in the case of a fault, at the place of use.

The dynamic test in conjunction with the plexi capillary test is used to detect small contrast differences.

4.1.1 Measuring setup

- Place the dynamic test without the holder but with the heart contour diaphragm and plexi capillary test on the table ((Fig. 1 / p. 24)).

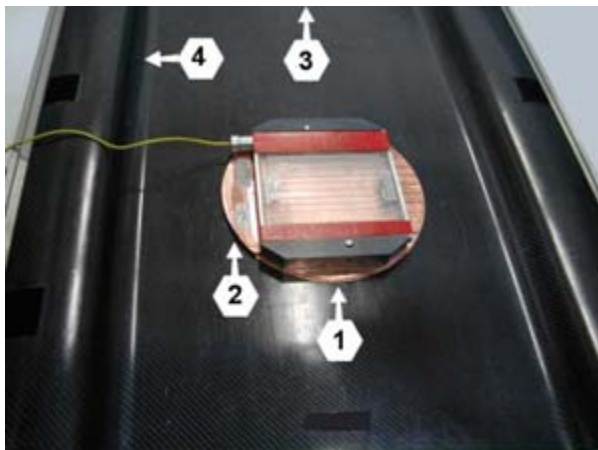


Fig. 1: Table

- | | |
|--------|-------------------------|
| Pos. 1 | Dynamic test |
| Pos. 2 | Heart contour diaphragm |
| Pos. 3 | Patient head end |
| Pos. 4 | Patient right side |

4.1.2 Requirements

- Select the medium dose level.
- Select zoom 2 (for 40-cm I.I.).
- Select zoom 1 (for 33-cm I.I.).
- Select program S2.
- Release radiation (FL).


NOTE

Edge enhancement must be switched off.

- Select the other LUT from LUT level 2 (2047/4095).
The image appears with less contrast.
- Save the FL image (ATB key or automatic LIH transfer).

4.2 Evaluation of the monitor image

4.2.1 Plexi capillary setpoints

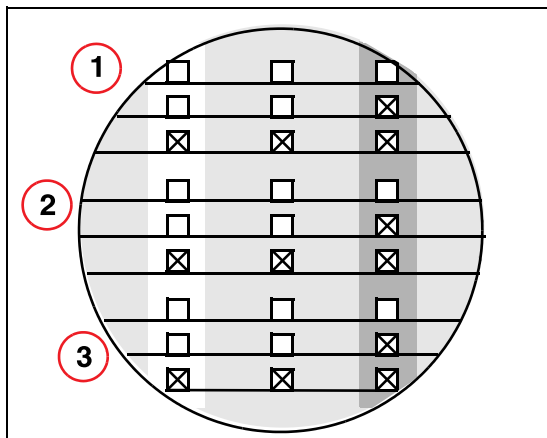


Fig. 2: Setpoint

Pos. 1 Group 3-mm wide
Pos. 2 Group 2-mm wide
Pos. 3 Group 1-mm wide

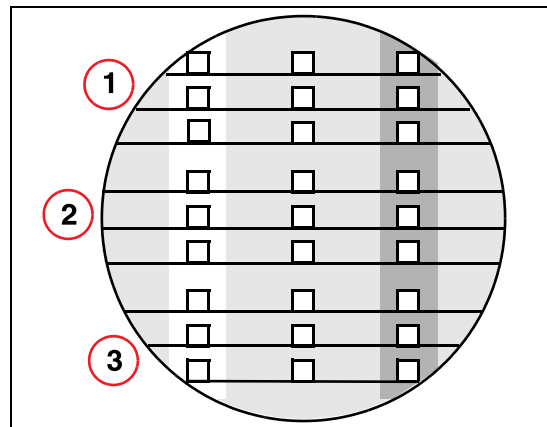


Fig. 3: Actual value

Pos. 1 Group 3-mm wide
Pos. 2 Group 2-mm wide
Pos. 3 Group 1-mm wide

NOTE

The plexi capillaries not identified must be visible (Fig. 2 / p. 26).

- Mark the non-visible plexi capillaries with a cross in the actual value table (Fig. 3 / p. 26).

4.2.2 Reading the indicated mean values (brightness)

- Evaluate the FL image in the viewer as follows:
 - Select **Options/Local Service** in the imaging system menu bar.
 - Enter the password, confirm with OK, and minimize the service software window.
 - Select the last image on the viewer task card.
 - Select **Tools/Rectangle** in the imaging system menu bar.

NOTE

The mouse pointer is visible with the position pointer.

- Proceed as described below:
 - Press the left mouse button and draw a square measuring field of up to approx. 2 cm x 15 cm.

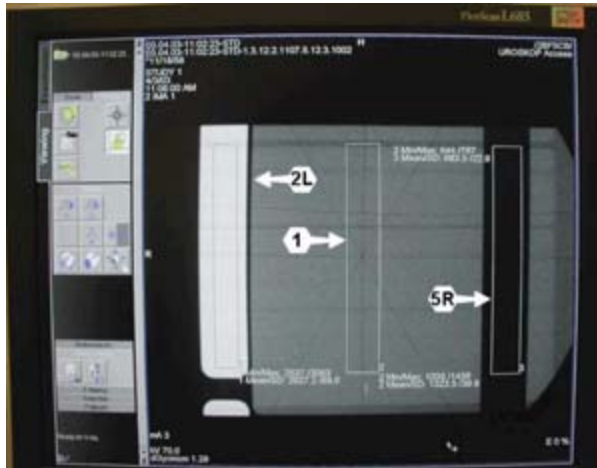


Fig. 4:

- Read the indicated mean value and enter the value in the table below, e.g. **Mean/SD: 1345.3/66.1"**.

Ranges	Factory	Place of use	Maintenance	Maintenance
2L				
1				
5R				

(Tolerance value: $\pm 15\%$)

5 Contrast

5.1 Edge enhancement, contrast enhancement and object movements

NOTE

Only perform the contrast check described in this chapter in the factory or, in the case of a fault, at the place of use.

5.1.1 Requirements

- Place the dynamic test without the holder but with the heart contour diaphragm and plexi capillary test on the table ([Fig. 1 / p. 24](#)).
- Select organ program S2.

NOTE

Organ program S2 has the settings edge enhancement = 0% and LUT 2 (2047/4095).

5.1.2 Edge enhancement



- Release radiation (FL) briefly.
- Evaluate the edge enhancement in the LIH image.

Press the button for edge enhancement on the tableside control panel. This successively selects the individual edge enhancement levels (level 1 or level 2).

Evaluating the monitor image

Edge enhancement function OK?

☐ Yes

☐ No

=> The bright-dark transitions become clearer when changing ([30/Fig. 3 / p. 13](#)) the edge enhancement selection.

5.1.3 LUT selection change



- Release radiation (FL) briefly.
- Evaluate the contrast change.

Press the button for LUT selection change on the tableside control panel.

Evaluating the monitor image

LUT selection change function in order?

☐ Yes

☐ No

=>The contrast changes noticeably in the case of an LUT selection change ([29/Fig. 3 / p. 13](#)).

5.2 Testing motion unsharpness for FL/PFL

5.2.1 Requirements



- Select organ program S2.
- Additionally attach a screwdriver in the center of the dynamic test.
- Release radiation (FL).

When one of the keys for table movement is pressed, the monitor image shows a visible smearing effect.

- End the radiation release.
- Select organ program S1 and repeat the procedure described above.
Objects are always displayed with high definition, but multiple times.
- Remove the screwdriver from the image area.

5.2.2 Evaluating the monitor image

FL and PFL functions OK?

☐ Yes

☐ No

Comments:

6 Image disturbances

6.1 Image disturbances (artifacts)

- Mark all image disturbances determined during the settings and IQ tests with a cross in the IQ measuring certificate table ([Tab. 1 / p. 33](#)).
- If image disturbances are detected that are not listed in the table, describe them under "Other disturbances".
- Three assessment numbers indicating the extent of the disturbance are provided for each assessment of the relevant disturbances.

6.2 Definition of the assessment numbers

- 1 = No disturbances and artifacts were detected during start-up.
- 2 = Minor disturbances, artifacts occurred sporadically during start-up. The cause could not be localized and the "error" could not be corrected. The disturbances scarcely affect the good overall image impression, and the ability to make a medical diagnosis from the images is absolutely not impaired. Therefore, the disturbances are tolerable.
- 3 = During start-up, more frequent or stronger disturbances/artifacts occurred that disturb the overall impression of the image or impair the ability of the images to be diagnosed medically and are therefore no longer tolerable. The system must not be shipped or handed over to the operator in this condition.

6.3 Description of the disturbances

Hum:

Inconsistencies resulting from electromagnetic interference in the imaging systems are unattractive and disturbing. Depending on the nature of the disturbance, they can considerably impair the ability of the images to be evaluated and should ideally not occur at all. They are tolerable only to a very slight degree. Hum disturbances are visible as periodic, horizontal light-dark patterns in the image; they are temporary and are not limited to a specific location.

Interference stripes:

Very high-frequency electromagnetic radiation is visible in the image as light or dark, sometimes very short horizontal lines (temporary). Interference stripes that are caused by dirt on optically effective surfaces must also be recorded here. They are limited to a specific location and are not temporary. Interference stripes are barely tolerable.

Ghost images:

These are object contours that are usually offset to one side and appear double. They are caused by reflections in poorly matched long video cables. Clearly visible ghost images are not tolerable.

Background structures:

Background structures are permanent, grid-shaped patterns, primarily in dark image sections, that are also called "fixed noise".

Pixel errors:

These errors are image pixels with no image information. They are visible on the monitor as dark or light pixel-size dots.

There are tolerable and intolerable pixel errors. The TV camera is inspected very precisely in the test area for pixel errors and only TV cameras with pixel errors corresponding to an internal specification according to type and number are provided to customers. These tolerable pixel errors must be documented in the IQ measuring protocol.

6.4 Evaluation of the image disturbances

Setpoint for assessment of the disturbance: Only 1 and 2 are allowed.

Tab. 1 Table 6

Nature of the disturbance, artifact	Assessment of the disturbance *1		
	1	2	3
Hum			
Interference stripes			
Ghost images (reflections)			
Background structures			
Pixel errors *2			

Other disturbances:

Comments:

Remarks: The image disturbance assessments must be recorded at the place of use.

***1** Assessment of the disturbances

- 1= No disturbances, artifacts
- 2= Slight disturbances, artifacts
- 3= Intolerable disturbances, artifacts

***2** State the number and position of pixel errors under Comments.

7 Organ programs

7.1 Programming the organ programs

NOTE

This is performed only at the place of use and upon customer request.

7.1.1 Checking newly programmed ADR control characteristics

- The programmed default ADR control characteristics, anti-isowatt, C03 Iodine, Paediatrics, and Litho 63 kV HC, were already checked in ([Checking the ADR control characteristics / p. 15](#)).
- Attach the precision 2.1-mm Cu X-ray filter for prefiltration in the area of the radiation outlet.

7.1.2 Evaluation



- Select the organ program .
- Release radiation.
- Read the kV and mA values displayed on the control panel and enter them in the table below.
- Enter n.a. in the kV and mA fields of the ADR control characteristics not used.

Tab. 1 Table 7

ADR characteristics FL/PFL	Dose	Place of use		Maintenance	
	Level	kV	mA	kV	mA

8 Laser camera

8.1 Camera/printer

Camera/printer available?

☐ Yes

☐ No

If yes: Camera type

.....

If no: Chapter not applicable.

NOTE

Also refer to "General Hardcopy Camera Information" and "Specific Hardcopy Camera Information" (SPL5-330.814).

8.1.1 Functional check

- The functional check must be performed with all possible image segmentations, in each case with positive and negative image display.

Definition: Positive image display means that the hardcopy image is identical to the monitor display.

Requirements

- Select the SMPTE test image in the viewer.

NOTE

Comply with a 20-minute camera warm-up phase.

- Select the image segmentation to be tested in each case.
- Select the image display to be tested in each case (positive/negative).
- Enter the film type and emulsion number used ([Tab. 1 / p. 34](#)).

NOTE

Necessary only for wet film cameras.

Tab. 1 Table 8

Film type	Emulsion number

Evaluation

- Measure the exposed film with the densitometer.
- Enter the measured film density values in the following table.
- Record the setting values after the functional check.

- Groups of fine lines are displayed in the image center (see (Fig. 2 / p. 12)).

Test OK?

☐ Yes☐ No

Comments:

Segmentation	Film density				
	Gray levels SMPTE	Film density *2 SET-POINT (start-up)	Film density SET-POINT (maintenance)	Film density ACTUAL (start-up)	Film density ACTUAL (maintenance)
Full screen *1	0%	≤ 0.25	≤ 0.27		
negative image display (bones white)	40%	1.0 ± 0.15	1.0 ± 0.2		
	100%	≥ 2.7	≥ 2.5		
Full screen	0%	≥ 2.7	≥ 2.5		
positive image display (bones black)	40%	1.2 ± 0.15	1.2 ± 0.2		
	100%	≤ 0.25	≤ 0.27		
Fourfold *1	0%	≤ 0.25	≤ 0.27		
negative image display (bones white)	40%	1.0 ± 0.15	1.0 ± 0.2		
	100%	≥ 2.7	≥ 2.5		
Fourfold	0%	≥ 2.7	≥ 2.5		
positive image display (bones black)	40%	1.2 ± 0.15	1.2 ± 0.2		
	100%	≤ 0.25	≤ 0.27		
___fold *1	0%	≤ 0.25	≤ 0.27		
negative image display (bones white)	40%	1.0 ± 0.15	1.0 ± 0.2		
	100%	≥ 2.7	≥ 2.5		
___fold	0%	≥ 2.7	≥ 2.5		
negative image display (bones black)	40%	1.2 ± 0.15	1.2 ± 0.2		
	100%	≤ 0.25	≤ 0.27		

*1 Negative LUTs are currently not testable.

*2 Reduced minimum values for all cameras available in syngo (values for special camera type, see documents "General Hardcopy Camera Information" and "Specific Hardcopy Camera Information" [SPL5-330.814]).

9 Changes to previous version

Section "Monitor testing"	Table completely revised
Section "Tablesideside control (overview)"	Key function terms revised

